



Solar Flare of 21 April 2002

The figure is a composite image taken by three SOHO instruments at the time of the 21 April 2002 solar flare. The green image of the solar disk at the time of the flare was taken by EIT in light emitted by iron ions at about 2 million degrees Kelvin. The blue/white image of a coronal mass ejection associated with the flare was taken by LASCO in visible light. The red image superimposed on the LASCO image is the total intensities from neutral hydrogen (HI Lyman Beta) observed by UVCS. The UVCS 'image' is constructed from a time sequence of observations as the ejected material moved through a region located 0.7 solar radii above the flare site. UVCS data also indicate threads of ejected material at very different temperatures above the flare site including iron with 17 missing electrons (Fe XVIII, 6 million degrees K), silicon with 11 missing electrons (Si XII, 2 million degrees K), and oxygen with 5 missing electrons (O VI, 300 thousand degrees K). Spectroscopy can be used to probe the extreme conditions during a solar flare where exotic processes are thought to be involved in producing the observed emissions.

This composite image was produced by Alexander Panasyuk (SAO). UVCS, LASCO, and EIT are instruments on the Solar and Heliospheric Observatory (SOHO). SOHO is a project of international cooperation between the European Space Agency and NASA.